

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

CHARTER COMMUNICATIONS, INC.;
SPECTRUM ADVANCED SERVICES,
LLC; AND SPECTRUM MANAGEMENT
HOLDING COMPANY, LLC,

Defendants.

Case No. 2:22-cv-00125-JRG

DEMAND FOR JURY TRIAL

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for patent infringement against Charter Communications, Inc., Spectrum Advanced Services, LLC, and Spectrum Management Holding Company, LLC (collectively “Charter”) and in support thereof alleges and avers as follows:

NATURE OF THE ACTION

1. This is a civil action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on Charter’s infringement of U.S. Patent Nos. 8,223,775 (the “775 Patent”), 8,284,690 (the “690 Patent”), 8,792,008 (the “008 Patent”), 9,210,362 (the “362 Patent”), 9,825,826 (the “826 Patent”), and 10,135,682 (the “682 Patent”) (collectively “the Patents-in-Suit”).

THE PARTIES

2. Entropic is a Delaware limited liability company with an office at 7150 Preston Rd., Suite 300 Plano, Texas 75024.

3. On information and belief, Defendant Charter Communications, Inc. is a corporation established under the laws of the State of Delaware, with a principal place of business at 1400 Atlantic St., Stamford, CT 06901.

4. Charter Communications, Inc. has a registered agent in Texas, Corporation Service Company d/b/a CSC - Lawyers Incorporating Service Company, located at 211 East 7th Street, Suite 620, Austin, Texas 78701.

5. On information and belief, Defendant Spectrum Advanced Services, LLC is a limited liability company established under the laws of the State of Delaware, with a principal place of business at 12405 Powerscourt Drive, St. Louis, MO 63131.

6. On information and belief, Defendant Spectrum Management Holding Company, LLC is a limited liability company established under the laws of the State of Delaware, with a principal place of business at 12405 Powerscourt Drive, St. Louis, MO 63131.

7. On information and belief, Charter owns or leases, and maintains and operates several stores in this district.

8. On information and belief, in each of those stores, Charter owns and stores equipment such as modems and set top boxes (“STBs”) and demonstrates services provided via those products to Charter customers.

9. On information and belief, Charter employs personnel that install, service, repair and/or replace equipment, as appropriate, in this district.

JURISDICTION AND VENUE

10. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the claims herein arise under the patent laws of the United States, 35 U.S.C. § 1 et seq., including 35 U.S.C. § 271.

11. This Court has personal jurisdiction over Charter in this action because Charter has committed acts of infringement within the State of Texas and within this district through, for example, the provision of cable television and internet services (“Accused Services”) via the lease, sale, and/or distribution of cable modems and STBs both online and from Spectrum stores in this District. For example, Charter has and continues to lease, sell, and/or distribute the Arris SB6183 cable modem, Spectrum PC20 (e.g. the Spectrum EU2251) cable modem, and products that operate in a similar manner (“Accused Cable Modem Products”), as well as Spectrum 100-series STBs, Spectrum 200-series STBs, Spectrum 101-series STBs, Spectrum 201-series STBs, Spectrum 110-series STBs, Spectrum 210-series STBs, the Arris DCX3600 STB, and products that operate in a similar manner (“Accused Set Top Products”). Further, there is general personal jurisdiction over Charter in this Judicial District, given Charter’s intentional direction of its advertising efforts to potential customers here in the form of robocalls that Charter makes to such potential customers.

12. The Accused Cable Modem Products, Accused Set Top Products, and Accused Services are available for subscription online from the Charter website.

13. The Accused Services are available for subscription from various physical stores, including those at 700 Alma Dr., Plano Texas 75075, 2100 N. Dallas Pkwy, Plano, Texas 75075, and 4255-A Dowlen Rd., Beaumont, Texas 77706.

14. The devices, including the Accused Cable Modem Products and Accused Set Top Products, provided by Charter to supply the Accused Services are provided to customers in this district and may be obtained by customers from physical locations in this district, including those at 700 Alma Dr., Plano Texas 75075, 2100 N. Dallas Pkwy, Plano, Texas 75075, and 4255-A Dowlen Rd., Beaumont, Texas 77706.

15. Venue is proper in this district pursuant to 28 U.S.C. § 1400(b). Venue is proper because Charter has committed and continues to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling Accused Services, Accused Cable Modem Products, and Accused Set Top Products in this district, and/or importing Accused Services, Accused Set Top Products, and Accused Cable Modem Products into this district, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in this district and/or committing at least a portion of any other infringements alleged herein in this district.

16. Charter has regular and established places of business in this district, including at least at 1414 Summit Ave., Plano, Texas 75074:



(https://www.google.com/maps/place/1414+Summit+Ave,+Plano,+TX+75074/@33.0094166,-96.691439,3a,75y,150.17h,90t/data=!3m7!1e1!3m5!1seMJAIjYK9mlgeFGO3-opTg!2e0!6shttps:%2F%2Fstreetviewpixels-pa.googleapis.com%2Fv1%2Fthumbnail%3Fpanoid%3DeMJAIjYK9mlgeFGO3-opTg%26cb_client%3Dsearch.gws-prod.gps%26w%3D86%26h%3D86%26yaw%3D150.1734%26pitch%3D0%26thumbfov%3D100!7i16384!8i8192!4m9!1m2!2m1!1s1414+Summit+Ave,+Plano,+TX+75074+and+2344+Rutlan)

d+Dr.+Austin,+TX+78758!3m5!1s0x864c193c2e57c475:0x9e396bd707e242d3!8m2!3d33.0089
809!4d-

96.6911307!15sCkYxNDE0IFN1bW1pdCBBdmUsIFBsYW5vLCBUWCA3NTA3NCBhbmQg
MjM0NCBSdXRsYW5kIERyLiBBdXN0aW4sIFRYIDc4NzU4kgERY29tcG91bmRfYnVpbGR
pbmc)

17. Charter, through its related entity, Spectrum Advanced Services, LLC, has retail stores in the district, including storefronts located at 700 Alma Dr., Plano Texas 75075, 2100 N. Dallas Pkwy, Plano, Texas 75075, and 4255-A Dowlen Rd., Beaumont, Texas 77706, among others.



(<https://www.google.com/maps/place/700+Alma+Dr,+Plano,+TX+75075/@33.009285,-96.7156924,3a,75y,79.47h,78.1t/data=!3m6!1e1!3m4!1sV4Kgs33OEPn0OTPugr40sw!2e0!7i16384!8i8192!4m5!3m4!1s0x864c18dd73ceae97:0x243da1c3797f6336!8m2!3d33.0097073!4d96.7151173>)



(https://www.google.com/maps/place/Spectrum+Store/@33.0290298,-96.8264017,3a,75y,278.05h,90t/data=!3m7!1e1!3m5!1sChdq99YtQUVhIguvPSaS_w!2e0!6shttps://streetviewpixels-pa.googleapis.com%2Fv1%2Fthumbnail%3Fpanoid%3DChdq99YtQUVhIguvPSaS_w%26cb_client%3Dmaps_sv.tactile.gps%26w%3D224%26h%3D298%26yaw%3D278.04987%26pitch%3D0%26thumbfov%3D100!7i16384!8i8192!4m14!1m6!3m5!1s0x864c23070b47ed93:0xd9df49287ca0c559!2sSpectrum+Store!8m2!3d33.0290441!4d-96.8265123!3m6!1s0x864c23070b47ed93:0xd9df49287ca0c559!8m2!3d33.0290441!4d-96.8265123!14m1!1BCgIgARICCAI)



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18. Charter targets its advertisements to residents of this district.
19. Charter continues to conduct business in this judicial district, including one or more acts of making, selling, using, importing and/or offering for sale Accused Products or providing the Accused Services to Charter's customers in this District.

THE PATENTS-IN-SUIT

20. On July 17, 2012, U.S. Patent No. 8,223,775, entitled "Architecture for a Flexible and High-Performance Gateway Cable Modem," was duly and legally issued by the United States

Patent and Trademark Office. A true and accurate copy of the '775 Patent is attached hereto as Exhibit A.

21. On October 9, 2012, U.S. Patent No. 8,284,690, entitled "Receiver Determined Probe," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '690 Patent is attached hereto as Exhibit B.

22. On July 29, 2014, U.S. Patent No. 8,792,008, entitled "Method and Apparatus for Spectrum Monitoring," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '008 Patent is attached hereto as Exhibit C.

23. On December 8, 2015, U.S. Patent No. 9,210,362, entitled "Wideband Tuner Architecture," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '362 Patent is attached hereto as Exhibit D.

24. On November 21, 2017, U.S. Patent No. 9,825,826 entitled "Method and Apparatus for Spectrum Monitoring," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '826 Patent is attached hereto as Exhibit E.

25. On November 20, 2018, U.S. Patent No. 10,135,682, entitled "Method and System for Service Group Management in a Cable Network," was duly and legally issued by the United States Patent and Trademark Office. A true and accurate copy of the '682 Patent is attached hereto as Exhibit F.

26. Entropic is the owner by assignment of all rights, title, and interest in the Patents-in-Suit.

ENTROPIC'S LEGACY AS A CABLE INNOVATOR

27. Entropic Communications Inc., the predecessor-in-interest to Entropic, was founded in San Diego, California in 2001 by Dr. Anton Monk, Itzhak Gurantz, Ladd El Wardani and others. Entropic Communications Inc. was instrumental in the development of the Multimedia

over Coax Alliance (“MoCA”) standard, Direct Broadcast Satellite (“DBS”) Outdoor Unit (“ODU”) single wire technology, and System-on-Chip (“SoC”) solutions for set-top boxes (“STBs”) in the home television and home video markets.

28. Dr. Monk received his Bachelor of Science degree and Doctorate in Electrical Engineering from the University of California San Diego and a Master of Science in Electrical Engineering from the California Institute of Technology.

29. Under the guidance of Dr. Monk, Entropic Communications Inc. grew to an eventual public listing on the NASDAQ in 2007. After the public listing, the company acquired RF Magic, Inc. in 2007, a company specializing in DBS ODU technology and related hardware.

30. Additional growth between 2007 and 2015 bolstered the technical expertise of Entropic Communications Inc., including signal acquisition, stacking, filtering, processing, and distribution for STBs and cable modems.

31. For years, Entropic Communications Inc. pioneered cutting edge SoC technologies, as well as television and internet related services. This technology simplified the installation required to support wideband reception of multiple channels for demodulation, improved home internet performance, and enabled more efficient and responsive troubleshooting and upstream signal management for cable providers. These innovations represented significant advances in the field, simplified the implementation of those advances, and reduced expenses for providers and customers alike.

32. In 2015, MaxLinear, Inc.—a leading provider of radio-frequency (RF), analog, digital, and mixed-signal semiconductor solutions—acquired Entropic Communications Inc. and the pioneering intellectual property developed by Dr. Monk and his team.

33. The Patents-in-Suit are the result of years of research and development in satellite and cable technology. These innovations are utilized by Charter to provide enhanced and expanded

services to customers, which in turn has increased revenues for Charter while at the same time reducing the costs.

FIRST CAUSE OF ACTION

(Infringement of the '775 Patent)

34. Entropic incorporates by reference and realleges each and every allegation of Paragraphs 1 through 33 as if set forth herein.

35. Entropic owns all substantial rights, interest, and title in and to the '775 Patent, including the sole and exclusive right to prosecute this action and enforce the '775 Patent against infringers, and to collect damages for all relevant times.

36. The '775 Patent generally describes a partitioned cable modem that performs cable modem functions and data and home networking functions. Functionally partitioning a cable modem to perform cable modem functions and data and home networking functions enables a cable modem to incorporate a variety of enhanced functions.

37. The Accused Cable Modem Products remain the property of Charter even when deployed at the property of a customer.

38. The Accused Cable Modem Products and Accused Services operate in a manner controlled and intended by Charter. Charter directly infringes the '775 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem Products (for example, the Spectrum PC20 and Arris SB6183) and/or the Accused Services (for example, utilizing cable modem functions).

39. As set forth in the attached non-limiting claim chart (Exhibit G), Charter has directly infringed and is infringing at least Claims 18 and 19 of the '775 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem Products.

40. Additionally, the use of the Accused Cable Modem Products by Charter to, for example, demonstrate products in brick-and-mortar stores in Plano, Texas and Beaumont, Texas or to, for example, test those products, constitute acts of direct infringement of at least Claims 18 and 19 of the '775 Patent.

41. Charter has been aware that it infringes Claims 18 and 19 of the '775 Patent since at least April 27, 2022 upon the receipt of the letters attached as Exhibit M and Exhibit N, as well as the receipt of copies of the Original Complaint filed in this case on April 27, 2022 and served on May 3, 2022. Since obtaining knowledge of its infringing activities, Charter has failed to cease its infringing activities.

42. Customers and subscribers of Charter infringe at least Claims 18 and 19 of the '775 Patent by using the claimed system, at least during the use of the Accused Cable Modem Products (for example, the Spectrum PC20 and Arris SB6183).

43. Charter actively induces customers' direct infringement. For example, Charter actively induces infringement of at least Claims 18 and 19 of the '775 Patent by providing customers with specific instructions and/or assistance (including installation) regarding the purchase and use of the Accused Cable Modem Products in a manner that infringes the '775 Patent in accordance with the ordinary course of operation of the Accused Services. For at least the above-listed reasons, Charter aids, instructs, supports and otherwise acts with the intent to cause an end user to use the Accused Cable Modem Products in a manner that infringes at least Claims 18 and 19 of the '775 Patent.

44. Additionally, Charter contributes to the customers' direct infringement. Charter provides apparatuses, namely the Spectrum PC20 and Arris SB6183 products, which are used by customers and directly infringe at least Claims 18 and 19 of the '775 Patent.

45. The Accused Cable Modem Products have no substantial non-infringing uses. When an end user uses the Accused Cable Modem Products in combination with, for example, the Accused Services, the end user directly infringes at least Claims 18 and 19 of the '775 Patent. The Accused Cable Modem Products are especially made or especially adapted for use in an infringement.

46. Charter's inducement of, and contribution to, the direct infringement of at least Claims 18 and 19 of the '775 Patent is continuous and ongoing via the provision of the Accused Cable Modem Products, which perform the Accused Services.

47. Charter's infringement of the '775 patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

48. Entropic has been damaged as a result of the infringing conduct alleged above. Charter is liable to Entropic in an amount that compensates Entropic for Charter's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

49. Entropic has complied with 35 U.S.C. § 287 with respect to the '775 Patent.

SECOND CAUSE OF ACTION

(Infringement of the '690 Patent)

50. Entropic incorporates by reference and realleges each and every allegation of Paragraphs 1 through 49 as if set forth herein.

51. Entropic owns all substantial rights, interest, and title in and to the '690 Patent, including the sole and exclusive right to prosecute this action and enforce the '690 Patent against infringers, and to collect damages for all relevant times.

52. The '690 Patent generally describes the process of generating probe transmissions in response to a request from a receiving node of a network, wherein the probe request specifies a

plurality of parameters that specify content payload of the probe transmission, and a second node to receive the probe transmission, which enhances flexibility and therefore, improves the receiving node's ability to efficiently recognize the precise form of the transmitted probe. The Accused Cable Modem Products remain the property of Charter even when deployed at the property of a customer.

53. The Accused Cable Modem Products and Accused Services operate in a manner controlled and intended by Charter.

54. Charter directly infringes the '690 Patent by using, importing, selling, and/or offering for sale the Accused Cable Modem Products (for example, the Spectrum PC20 and Arris SB6183) and/or the Accused Services (for example, probing for cable modem parameters).

55. As set forth in the attached non-limiting claim chart (Exhibit H), Charter has directly infringed and is infringing at least the method of Claims 7, 8, 11, 15, and 16 of the '690 Patent by using, selling, and/or offering for sale the Accused Services.

56. Additionally, the use of the Accused Services by Charter to, for example, demonstrate products in brick-and-mortar stores in Plano, Texas and Beaumont, Texas or to, for example, test those products, constitute acts of direct infringement of at least Claims 7, 8, 15, and 16 of the '690 Patent.

57. Charter has been aware that it infringes Claims 7, 8, 11, 15, and 16 of the '690 Patent since at least April 27, 2022 upon the receipt of the letters attached as Exhibit M and Exhibit N, as well as the receipt of copies of the Original Complaint filed in this case on April 27, 2022 and served on May 3, 2022. Since obtaining knowledge of its infringing activities, Charter has failed to cease its infringing activities.

58. Customers and subscribers of Charter infringe at least Claims 7 and 8 of the '690 Patent by using the claimed method, at least during receipt of the Accused Services utilizing, for

example, the Accused Cable Modem Products (for example, the Spectrum PC20 and Arris SB6183).

59. Charter actively induces customers' direct infringement. For example, Charter actively induces infringement of at least Claims 7 and 8 of the '690 Patent by providing the Accused Cable Modem Products to Charter customers with specific instructions and/or assistance (including installation) regarding the use of the Accused Cable Modem Products in a manner that infringes the '690 Patent in accordance with the ordinary course of operation of the Accused Services. Charter provides the cable modem functions claimed by the '690 Patent via the Accused Services, which enable and induce its customers to directly infringe the claims. For at least the above-listed reasons, Charter aids, instructs, supports and otherwise acts with the intent to cause an end user to use the Accused Cable Modem Products in a manner that infringes at least Claims 7 and 8 of the '690 Patent.

60. Additionally, Charter contributes to the customers' direct infringement. Charter provides apparatuses, namely the Spectrum PC20 and Arris SB6183 products, used by customers to perform at least Claims 7 and 8 of the '690 Patent.

61. The Accused Cable Modem Products have no substantial non-infringing uses. When an end user uses the Accused Cable Modem Products in combination with, for example, the Accused Services, the end user directly infringes at least Claims 7 and 8 of the '690 Patent. The Accused Cable Modem Products are especially made or especially adapted for use in an infringement.

62. Charter's inducement of, and contribution to, the direct infringement of at least Claims 7 and 8 of the '690 Patent is continuous and ongoing via the provision of the Accused Services as well as technical assistance provided by Charter for equipment it provides to its customers in support of the provision of the Accused Services.

63. Charter's infringement of the '690 patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

64. Entropic has been damaged as a result of the infringing conduct alleged above. Charter is liable to Entropic in an amount that compensates Entropic for Charter's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

65. Entropic has complied with 35 U.S.C. § 287 with respect to the '690 Patent.

THIRD CAUSE OF ACTION

(Infringement of the '008 Patent)

66. Entropic incorporates by reference and realleges each and every allegation of Paragraphs 1 through 65 as if set forth herein.

67. Entropic owns all substantial rights, interest, and title in and to the '008 Patent, including the sole and exclusive right to prosecute this action and enforce the '008 Patent against infringers, and to collect damages for all relevant times.

68. The '008 Patent generally describes a system that receives a signal having a range of frequencies, digitizes the received signal, and reports certain signal characteristics to the source of the received signal.

69. The Accused Set Top Products remain the property of Charter even when deployed at the property of a customer.

70. The Accused Set Top Products and Accused Services operate in a manner controlled and intended by Charter.

71. Charter directly infringes the '008 Patent by using, importing, selling, and/or offering for sale the Accused Set Top Products (for example, the Spectrum 210) and/or the Accused Services (for example, monitoring signals generated by the Accused Set Top Products).

72. As set forth in the attached non-limiting claim chart (Exhibit I), Charter has directly infringed and is infringing at least Claims 1 and 2 of the '008 Patent by using, importing, selling, and/or offering for sale the Accused Set Top Products.

73. Additionally, the use of the Accused Set Top Products by Charter to, for example, demonstrate products in brick-and-mortar stores in Plano, Texas and Beaumont, Texas or to, for example, test those products, constitute acts of direct infringement of at least Claims 1 and 2 of the '008 Patent.

74. Charter has been aware that it infringes Claims 1 and 2 of the '008 Patent since at least April 27, 2022 upon the receipt of the letters attached as Exhibit M and Exhibit N, as well as the receipt of copies of the Original Complaint filed in this case on April 27, 2022 and served on May 3, 2022. Since obtaining knowledge of its infringing activities, Charter has failed to cease its infringing activities.

75. Customers and subscribers of Charter infringe at least Claims 1 and 2 of the '008 Patent by using the claimed system, at least during the use of the Accused Set Top Products (for example, the Spectrum 210).

76. Charter actively induces customers' direct infringement. For example, Charter actively induces infringement of at least Claims 1 and 2 of the '008 Patent by providing customers with specific instructions and/or assistance (including installation) regarding the purchase and use of the Accused Set Top Products in a manner that infringes the '008 Patent in accordance with the ordinary course of operation of the Accused Services. For at least the above-listed reasons, Charter aids, instructs, supports and otherwise acts with the intent to cause an end user to use the Accused Set Top Products in a manner that infringes at least Claims 1 and 2 of the '008 Patent.

77. Additionally, Charter contributes to the customers' direct infringement. Charter provides apparatuses, namely the Spectrum 210 product, used by customers to perform at least Claims 1 and 2 of the '008 Patent.

78. The Accused Set Top Products have no substantial non-infringing uses. When an end user uses the Accused Set Top Products in combination with, for example, the Accused Services, the end user directly infringes at least Claims 1 and 2 of the '008 Patent. The Accused Cable Modem Products are especially made or especially adapted for use in an infringement.

79. Charter's inducement of, and contribution to, the direct infringement of at least Claims 1 and 2 of the '008 Patent is continuous and ongoing via the provision of the Accused Services as well as technical assistance provided by Charter for equipment it provides to its customers in support of the provision of the Accused Services.

80. Charter's infringement of the '008 patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

81. Entropic has been damaged as a result of the infringing conduct alleged above. Charter is liable to Entropic in an amount that compensates Entropic for Charter's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

82. Entropic has complied with 35 U.S.C. § 287 with respect to the '008 Patent.

FOURTH CAUSE OF ACTION

(Infringement of the '362 Patent)

83. Entropic incorporates by reference and realleges each and every allegation of Paragraphs 1 through 82 as if set forth herein.

84. Entropic owns all substantial rights, interest, and title in and to the '362 Patent, including the sole and exclusive right to prosecute this action and enforce the '362 Patent against infringers, and to collect damages for all relevant times.

85. The '362 Patent generally describes a wideband receiver system that down converts a plurality of frequencies including desired television channels and undesired television channels, digitizes frequencies, selects desired television channels from the frequencies, and outputs the selected television channels to a demodulator as a digital data stream.

86. The Accused Set Top Products remain the property of Charter even when deployed at the property of a customer.

87. The Accused Services operate in a manner controlled and intended by Charter.

88. Charter directly infringes the '362 Patent by using, importing, selling, and/or offering for sale the Accused Set Top Products (for example, the Spectrum 210) and/or the Accused Services (for example, down converting, digitizing, and selecting desired television channels from frequencies).

89. As set forth in the attached non-limiting claim chart (Exhibit J), Charter has directly infringed and is infringing at least Claim 11 of the '362 Patent by using, selling, and/or offering for sale the Accused Services.

90. Additionally, the use of the Accused Services by Charter to, for example, demonstrate products in brick-and-mortar stores in Plano, Texas and Beaumont, Texas or to, for example, test those products, constitute acts of direct infringement of at least Claim 11 of the '362 Patent.

91. Charter has been aware that it infringes Claim 11 of the '362 Patent since at least April 27, 2022 upon the receipt of the letters attached as Exhibit M and Exhibit N, as well as the receipt of copies of the Original Complaint filed in this case on April 27, 2022 and served on May

3, 2022. Since obtaining knowledge of its infringing activities, Charter has failed to cease its infringing activities.

92. Customers and subscribers of Charter infringe at least Claim 11 of the '362 Patent by using the claimed method, at least during receipt of the Accused Services utilizing, for example, the Accused Set Top Products (for example, the Spectrum 210).

93. Charter actively induces customers' direct infringement. For example, Charter actively induces infringement of at least Claim 11 of the '362 Patent by providing the Accused Set Top Products to Charter customers with specific instructions and/or assistance (including installation) regarding the use of the Accused Set Top Products in a manner that infringes the '362 Patent in accordance with the ordinary course of operation of the Accused Services. Charter provides the television channel down-conversion, digitization, selection, and output functions claimed by the '362 Patent via the Accused Services, which enable and induce its customers to directly infringe the claim. For at least the above-listed reasons, Charter aids, instructs, supports and otherwise acts with the intent to cause an end user to use the Accused Set Top Products in a manner that infringes at least Claim 11 of the '362 Patent.

94. Additionally, Charter contributes to the customers' direct infringement. Charter provides apparatuses, namely the Spectrum 210, used by customers to perform at least Claim 11 of the '362 Patent.

95. The Accused Set Top Products have no substantial non-infringing uses. When an end user uses the Accused Set Top Products in combination with, for example, the Accused Services, the end user directly infringes at least Claim 11 of the '362 Patent. The Accused Cable Modem Products are especially made or especially adapted for use in an infringement.

96. Charter's inducement of, and contribution to, the direct infringement of at least Claim 11 of the '362 Patent is continuous and ongoing via the provision of the Accused Services

as well as technical assistance provided by Charter for equipment it provides to its customers in support of the provision of the Accused Services.

97. Charter's infringement of the '362 patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

98. Entropic has been damaged as a result of the infringing conduct alleged above. Charter is liable to Entropic in an amount that compensates Entropic for Charter's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

99. Entropic has complied with 35 U.S.C. § 287 with respect to the '362 Patent.

FIFTH CAUSE OF ACTION

(Infringement of the '826 Patent)

100. Entropic incorporates by reference and realleges each and every allegation of Paragraphs 1 through 99 as if set forth herein.

101. Entropic owns all substantial rights, interest, and title in and to the '826 Patent, including the sole and exclusive right to prosecute this action and enforce the '826 Patent against infringers, and to collect damages for all relevant times.

102. The '826 Patent generally describes a system that receives a signal having a range of frequencies, digitizes the received signal, and reports certain signal characteristics to the source of the received signal.

103. The Accused Set Top Products remain the property of Charter even when deployed at the property of a customer.

104. The Accused Services operate in a manner controlled and intended by Charter.

105. Charter directly infringes the '826 Patent by using, importing, selling, and/or offering for sale the Accused Set Top Products (for example, the Spectrum 210) and/or the Accused Services (for example, monitoring signals generated by the Accused Set Top Products).

106. As set forth in the attached non-limiting claim chart (Exhibit K), Charter has directly infringed and is infringing at least Claim 1 of the '826 Patent by using, selling, and/or offering for sale the Accused Services.

107. Additionally, the use of the Accused Services by Charter to, for example, demonstrate products in brick-and-mortar stores in Plano, Texas and Beaumont, Texas or to, for example, test those products, constitute acts of direct infringement of at least Claim 1 of the '826 Patent.

108. Charter has been aware that it infringes Claim 1 of the '826 Patent since at least April 27, 2022 upon the receipt of the letters attached as Exhibit M and Exhibit N, as well as the receipt of copies of the Original Complaint filed in this case on April 27, 2022 and served on May 3, 2022. Since obtaining knowledge of its infringing activities, Charter has failed to cease its infringing activities.

109. Customers and subscribers of Charter infringe at least Claim 1 of the '826 Patent by using the claimed method, at least during the use of the Accused Set Top Products (for example, the Spectrum 210).

110. Charter actively induces customers' direct infringement. For example, Charter actively induces infringement of at least Claim 1 of the '826 Patent by providing the Accused Set Top Products to Charter customers with specific instructions and/or assistance (including installation) regarding the use of the Accused Set Top Products in a manner that infringes the '826 Patent in accordance with the ordinary course of operation of the Accused Services. Charter provides the signals claimed by the '826 Patent via the Accused Services, which enable and induce

its customers to directly infringe the claim. For at least the above-listed reasons, Charter aids, instructs, supports and otherwise acts with the intent to cause an end user to use the Accused Set Top Products in a manner that infringes at least Claim 1 of the '826 Patent.

111. Additionally, Charter contributes to the customers' direct infringement. Charter provides apparatuses, namely the Spectrum 210, used by customers to perform at least Claim 1 of the '826 Patent.

112. The Accused Set Top Products have no substantial non-infringing uses. When an end user uses the Accused Set Top Products in combination with, for example, the Accused Services, the end user directly infringes at least Claim 1 of the '826 Patent. Charter knew that the Accused Set Top Products were especially made for use in an infringing manner prior to the filing of this lawsuit. The Accused Cable Modem Products are especially made or especially adapted for use in an infringement.

113. Charter's inducement of, and contribution to, the direct infringement of at least Claim 1 of the '826 Patent is continuous and ongoing via the provision of the Accused Services as well as technical assistance provided by Charter for equipment it provides to its customers in support of the provision of the Accused Services.

114. Charter's infringement of the '826 patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

115. Entropic has been damaged as a result of the infringing conduct alleged above. Charter is liable to Entropic in an amount that compensates Entropic for Charter's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

116. Entropic has complied with 35 U.S.C. § 287 with respect to the '826 Patent.

SIXTH CAUSE OF ACTION

(Infringement of the '682 Patent)

117. Entropic incorporates by reference and realleges each and every allegation of Paragraphs 1 through 116 as if set forth herein.

118. Entropic owns all substantial rights, interest, and title in and to the '682 Patent, including the sole and exclusive right to prosecute this action and enforce the '682 Patent against infringers, and to collect damages for all relevant times.

119. The '682 Patent generally describes a method performed by a cable modem termination system, the method including determining a corresponding signal-to-noise-ratio (“SNR”) related metric, assigning cable modems to service groups based on a respective corresponding SNR-related metric, generating a composite SNR-related metric based on a worst-case SNR profile, selecting a physical layer communication parameter to be used for communicating with a service group based on a composite SNR-related metric, and communicating with cable modems in the service group using the selected physical layer communication parameter.

120. The Accused Cable Modem Products remain the property of Charter even when deployed at the property of a customer.

121. The Accused Services operate in a manner controlled and intended by Charter.

122. Charter directly infringes the '682 Patent by using, selling, and/or offering for sale the Accused Services, which utilize cable modem termination systems that communicate with the Accused Cable Modem Products (for example, the Spectrum PC20 and Arris SB6183).

123. As set forth in the attached non-limiting claim chart (Exhibit L), Charter has directly infringed and is infringing at least Claim 14 of the '682 Patent by using, selling, and/or offering for sale the Accused Services.

124. Additionally, the use of the Accused Services by Charter to, for example, demonstrate products in brick-and-mortar stores in Plano, Texas and Beaumont, Texas or to, for example, test those products, constitute acts of direct infringement of at least Claim 1 of the '682 Patent.

125. Charter has been aware that it infringes Claim 1 of the '682 Patent since at least April 27, 2022 upon the receipt of the letters attached as Exhibit M and Exhibit N, as well as the receipt of copies of the Original Complaint filed in this case on April 27, 2022 and served on May 3, 2022. Since obtaining knowledge of its infringing activities, Charter has failed to cease its infringing activities. Charter's infringement of the '682 patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

126. Entropic has been damaged as a result of the infringing conduct alleged above. Charter is liable to Entropic in an amount that compensates Entropic for Charter's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

127. Entropic has complied with 35 U.S.C. § 287 with respect to the '682 Patent.

JURY DEMAND

Entropic hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

WHEREFORE, Entropic requests that:

- A. The Court find that Charter has directly infringed the Patents-in-Suit and hold Charter liable for such infringement;
- B. The Court find that Charter has indirectly infringed the Patents-in-Suit by inducing its customers to directly infringe the Patents-in-Suit and hold Charter liable for such infringement;

C. The Court find that Charter has indirectly infringed the Patents-in-Suit by contributing to its customers directly infringement of the Patents-in-Suit and hold Charter liable for such infringement;

D. The Court award damages pursuant to 35 U.S.C. § 284 adequate to compensate Entropic for Charter's past infringement of the Patents-in-Suit, including both pre- and post-judgment interest and costs as fixed by the Court;

E. The Court increase the damages to be awarded to Entropic by three times the amount found by the jury or assessed by the Court;

F. The Court declare that this is an exceptional case entitling Entropic to its reasonable attorneys' fees under 35 U.S.C. § 285; and

G. The Court award such other relief as the Court may deem just and proper.

Dated: May 24, 2022

Respectfully submitted,

/s/ James Shimota by permission Wesley Hill
James Shimota (*pro hac vice* forthcoming)
Jason Engel (*pro hac vice* forthcoming)
George Summerfield (*pro hac vice* forthcoming)
K&L GATES LLP
70 W. Madison Street, Suite 3300
Chicago, IL 60602
Tel.: (312) 372-1121
Fax: (312) 827-8000
jim.shimota@klgates.com
jason.engel@klgates.com
george.summerfield@klgates.com

Brian Bozzo (*pro hac vice* forthcoming)
K&L GATES LLP
210 Sixth Ave.

Pittsburgh, PA 15222
Tel.: (412) 355-6500
Fax: (412) 355-6501
brian.bozzo@klgates.com

Wesley Hill
Texas Bar No. 24032294
Andrea Fair
Texas Bar No. 24078488
WARD, SMITH & HILL, PLLC
1507 Bill Owens Pkwy
Longview, TX 75604
Tel: (903) 757-6400
Fax (903) 757-2323
wh@wsfirm.com
andrea@wsfirm.com

**ATTORNEYS FOR PLAINTIFF
ENTROPIC COMMUNICATIONS, LLC**

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was filed electronically in compliance with Local Rule CV-5(a). Therefore, this document was served on all counsel who are deemed to have consented to electronic service on this the 24th day of May, 2022.

/s/ Wesley Hill